

Dayton 2001—Briefly

For me, Dayton 2001 was all too brief. Due to a longstanding family commitment, I was only able to attend the Dayton Hamvention on Friday and flew home to the Seattle area on Saturday morning.

The main casualty of my brief stay was any attempt to visit the fleamarket other than to indulge in my favorite Hamvention food, grilled bratwurst. This actually worked out well, because Friday featured some of the worst weather that I've ever seen at a Hamvention, and most of the attendees crowded inside, causing the temperature (and humidity) to soar. The mud ruts in the "parking fields" surrounding the Hara Arena were amazing; tow trucks were standing by to rescue the unlucky vehicles that became mired. Inside though it was business as usual.

The TAPR Forum on Friday from 10:00–12:45 was well attended, with interesting presentations on the latest happenings with TAPR and its projects. Some highlights:

- The project generating the most interest is the kit production of the W7PUA software-defined radio (SDR). The first 100 kits will be offered for sale during the summer of 2001.
- The TAPR EasyTrak antenna rotor controller is still in progress, but due to the intense interest in AO-40, plans to release EasyTrak have been accelerated.
- The TAPR Frequency Hopping Spread Spectrum radio is making steady progress. The hardware of the digital board has been debugged for the most part, and it's likely that a new (development) revision of the digital board will be done this summer, allowing greater progress to be made on testing and debugging of the RF board.
- TAPR will be offering a digital voice board based on the work of Charles Brain, G4GUO. A demonstration of the resulting voice quality (a loopback jumper was used to digitize and then "analog" a speaker's voice) was offered.
- It was planned to include APRS with the TAPR presentation, with offerings from many speakers shoehorned into a 45-minute slot, but in the last two weeks

P.O. Box 2406, Woodinville, WA 98072
e-mail: <n8gnj@cq-amateur-radio.com>

Major Digital Events

Call for Papers for the ARRL and TAPR Digital Communications Conference is early August 2001 (exact cutoff date is to be determined). For more information, see <www.tapr.org/dcc>, which includes contact/submission information and paper guidelines. I'd like to take this opportunity to emphasize that anyone can write and submit a paper (and a subsequent [optional] opportunity to present it) for the DCC. It does not have to be of "scholar" quality. It should be readable and relevant to the topic at hand—Digital Wireless Communications.

The ARRL and TAPR Digital Communications Conference (DCC), September 21–23, 2001, Cincinnati, Ohio. I simply cannot recommend the DCC highly enough. It's an entire weekend of total immersion in the digital aspects of amateur radio. Papers are presented, and there is ample opportunity for networking (of the personal kind) and meeting like-minded experimenters and developers. Of special note, in response to numerous requests the National APRS Seminar has been extended to an all-day session on Friday. Extensive information on the DCC is available on TAPR's conference web page at <www.tapr.org/dcc>. As with the Dayton Hamvention, attendance at the DCC is highly recommended.

before Dayton an open slot on Sunday was found for an APRS-only presentation. As I wasn't present, I can't offer any report from the APRS session.

Vendor Highlights

After the TAPR forum I tried to visit at least briefly all the vendor booths inside the Hara Arena, and later spent some time in the TAPR and CQ booths. Some impressions:

- It's usual that the APRS booths are crowded, but this year the description "crowded" doesn't do them justice; the area was packed and mobbed, and as a result I wasn't able to see much. There were a number of new APRS-related products introduced, including new versions of APRS software for most platforms. Byon Garrabrant, N6BG (BYON-ICS), announced the Tiny-Trak II, new features of which include altitude and smart beaconing, plus "corner pegging"—sending a transmission when there's a significant change in direction. John Hansen, W2FS's new products include a PS/2 keyboard adapter for the popular Kenwood D700 radio and a PIC-based "KISS TNC."
- TAPR offered a new version of its Compact Flash Adapter that can accommodate an IBM Microdrive (a hard disk drive with the same form factor as a Compact Flash card) which offers storage capacity up to 1 GB.
- In the main display area of the Hara Arena (the "hockey rink"), there was an entire row of German companies,
- among which were SYMEK Daten-systeme und Elektronik GmbH. SYMEK was offering its TNC3S high-speed, dual-modem packet radio controller; TNC31S and TNC31SX high-speed packet-radio controller; and most impressive, TRX4S 435 MHz high-speed data transceiver. The TRX4S offers speeds of up to 153.6 Kbps for real; this is a purpose-designed, no-compromises, complete (no transverter needed) digital radio. I'll be devoting much of a future column to discussing the SYMEK products, but it was heartening to see SYMEK at Dayton.
- A product that I had been awaiting for some time finally appeared at the CQ Communications booth—a complete set of *Ham Radio* magazine CD-ROMs in three volumes (1968–76, 1977–1983, and 1984–1990). (See CQ's ad for them elsewhere in this issue.—ed.)
- *The New RTTY Journal* began offering *RTTY Journal* Archive Discs CD-ROMs in eight discs, from 1953 through 1997.
- Kantronics previewed (not yet available for sale) their KAM XL multi-mode DSP-based controller, including a PSK-31 mode and two radio ports.
- CQ Communications announced their "Inaugural Class" of the CQ Amateur Radio Hall of Fame. In creating the inaugural list, CQ Communications did some catching up, inducting wireless pioneers such as Nikola Tesla, Lee DeForrest, and Al Gross, W8PAL. Among the 50 names are two well-known digital pioneers—Tom Clark,

W3IWI, and Phil Karn, KA9Q (who remarked, when shown the list, something to the effect "Nice to be one of the few on the list who are among the living.").

• Timewave displayed a number of enhancements to its product line, including a sound-card interface upgrade for the venerable PK-232, a DSP upgrade for the PK-232, and a DSP upgrade for the PK-900. Timewave's continuing support for the PK-232 may well make the PK-232 one of the longest-lasting digital controllers in amateur radio history. Serious kudos to Timewave for offering its catalog of products on a CD-ROM; it's a mystery why other amateur radio manufacturers and dealers with extensive product lines don't offer CD-ROMs of their catalogs.

• Alinco displayed its new DR-135 (2m) / 235 (222 MHz) / 435 (UHF) series of radios that claim 9600 baud capability and an optional 9600 baud TNC. We're particularly interested in the DR-235, as the Seattle area has one 222 MHz 9600 baud repeater nearly converted (from a 1200 baud) and another (currently portable) soon to go on the air from a permanent location.

• WiNRADiO Communications announced new versions of its PC-based wideband radio receivers, including first-ever versions for Macintosh and Linux, as well as a version with a USB interface.

• AMSAT-NA released an updated version of the *AMSAT-NA Digital Satellite Guide* by Gould Smith, WA4SXM, and contributors.

Packet Bash and More

Friday evening was the annual Packet Bash banquet, co-hosted by TAPR and the Miami Valley FM Association. The food was good, and the featured speaker was TAPR's Steve Bible, N7HPR, who spoke on software-defined radios and their "big picture" meaning for amateur radio. Steve spoke extensively about the DSP-10 kit that TAPR will be producing, and how it allows amateurs to become experimenters once again, as the focus of RF shifts from hardware (which is increasingly difficult for amateurs to develop) to software (which is increasingly easier for amateurs to develop). In software, amateurs can easily create new modes, new modulation techniques, signaling techniques, adaptive systems . . . the list is literally endless. With the ease in sharing of new, experimental code via the internet (as has been well demonstrated with the rise of PSK31), coupled with the possibilities of relatively low-cost soft-



Ceramic

Junghans Atomic Ceramic sapphire lens, ceramic band, LCD for day, date, zone luminous, w-resistant 100ft, all ceramic-harder than steel \$790



atomic radio with 2 alarms and temperature, day, date, LCD \$39.95



NEW

Junghans Atomic Carbon Fiber Watch, stainless bezel, sapphire lens, LCD day, date, time zone, carbon/leather band, 7 models \$279

ATOMIC TIME

...self setting

...correct time

...atomic clock

World's most exact time... atomic clocks, atomic watches and weather stations

- for any time zone
- synchronized to the u.s. atomic clock in colorado
- accurate to 1sec. in 1 mil. years
- engineered in germany

complete line of atomic clocks

JUNGHANS MEGA CERAMIC Watch luminous, never scratches, 5 models

JUNGHANS MEGA CARBON Watch

JUNGHANS MEGA CLOCKS \$47-109

JUNGHANS SOLAR WATCHES \$279

ATOMIC SPORTS WATCHES \$129

ATOMIC SCHOOL/OFFICE CLOCKS

Oregon Scientific Weather Stations, Weather Forecast, World Time, NOAA Radios, Radio Controlled Clocks

Atomic Digital Wall Clocks \$59...

call for our FREE Brochure

or go to www.atomictime.com

credit card orders call toll free

1-800-985-8463

30 Day Money Back Guarantee
send checks incl. s&h \$6.95 to

ATOMIC TIME, INC.
1010 JORIE BLVD.
OAK BROOK, IL 60523



Atomic dual alarm clock with temperature day and date, 2AA Batteries black 3.5x4.5x2" \$29.95



black arabic 12" wall clock for home or office • \$59.95 (wood \$69.95)



Atomic Sports Watch Silver Polymer Case, LCD for day, date or seconds 100 ft water resistant black leather band \$129

POCKET GENERATOR



ONLY 6.5"l x 6" h x 3.5" d & Very Light Weight (4.5 Lb.) Perfect for Laptops, Chargers, Boom Boxes, Cameras, etc.

**\$54.95 +
\$8.00 s&h**

- Portable 12 Volt 5 Amp-Hr Gel Cell w/110 VAC Inverter
- 50 Watt Cont./80 Watt Peak DC to AC Inverter
- Modified Sine Wave
- Measures Only 1.25" x 2.5" x 3.25"
- 110 VAC Outlet & 12 VDC Cigarette Lighter Output
- Canvas Carrying Case w/ Shoulder Strap
- Car & Wall Chargers

POCKET STATION

- Portable 12 Volt 4.5 Amp-Hr Gel Cell Battery
- Measures Only 4.5"l x 5.75" h x 3" d
- 12 VDC Cigarette Lighter Output
- Canvas Carrying Case w/ Belt Loop & Shoulder Strap
- Car & Wall Chargers



**\$34.95 +
\$7.00 s&h**

12 VDC to 110VAC INVERTERS

- Modified Sine Wave
- Great w/ THE POWER STATION or MEGA STATION
- Overload, Thermal, & Undervoltage Protection

Model	Cont. Pwr	Peak Pwr	Price
PC150	150 Watts	300 Watts	\$34.95*
PC350	350 Watts	600 Watts	\$49.95*
PP600	600 Watts	800 Watts	\$98.95 \$79.95*
PP1000	1000 Watts	2000 Watts	\$219.95**
PP1500	1500 Watts	3000 Watts	\$324.95 \$279.95**
PP2500	2500 Watts	4000 Watts	\$549.95***

*\$10.50s&h **\$12.50s&h ***\$14.50s&h



**\$229
\$324.95*** 64Watt: \$449 \$429.95*****



POWERFUL 900 PEAK AMPS!

GREAT FOR EMERGENCIES!

EASILY RECHARGED FROM HOME AND VEHICLE 12-VOLT DC & 110/120-VOLT AC CHARGERS INCLUDED

SPRING-LOADED CLAMP HOLSTERS DURABLE RUGGED IMPACT HOUSING

**\$99.95 +
\$16.00 s&h**



MEGA STATION AC

- Compact 17 Amp-Hr Gel Cell w/ Heavy Duty Jumper Cables
- Detachable 150w Inverter (use it in your vehicle tool)
- 12 VDC Cigarette Lighter Output
- Built in Worklight
- Charge Indicator & Safety Switch
- Car & Wall Charger

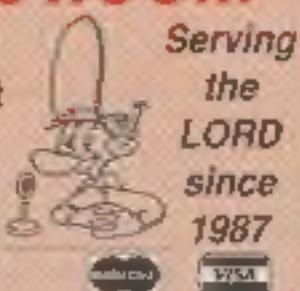
SOLAR PANELS & CHARGE CONTROLLERS

All Wattage's & Sizes

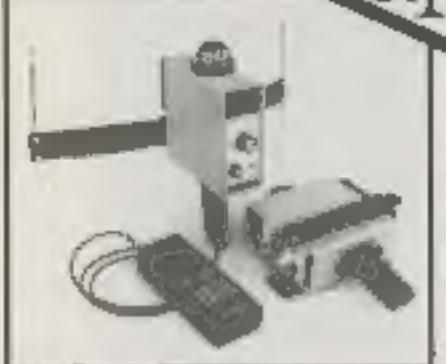
- Rigid - 5, 11, 22, 32, 42, And 64 Watt Panels
- 5 Watt: \$105 \$94.95* 11 Watt: \$179 \$164.95*
- 22 Watt: \$219 \$199.95**
- 32 Watt: \$269 \$259.95*** 42 Watt: \$329 \$324.95*** 64Watt: \$449 \$429.95***
- Flexible 5, 11 & 32 Watt Panels
- 5 Watt Flex: \$115 \$104.95* 11 Watt Flex: \$189 \$179.95** 32 Watt Flex: \$389 \$354.95***
- Reverse Blocking & By-Pass Diodes
- Silicon Alloy Deposited on Stainless Steel. No Glass to Break
- Triple Junction Silicon Cells
- *\$10.50s&h **\$12.50s&h ***\$16.50s&h ****\$18.00s&h

WWW.HAMCONTACT.COM

P.O. Box 4025,
Westminster, CA 92684, Dept. CQ
INFO 714-901-0573
FAX 714-901-0583
ORDERS 800-933-4264
E-Mail: CQ@HAMCONTACT.COM



For Literature on Power Supplies, Inverters, Antennas, HT & Gel-Cell Batteries, Ham Access, Etc. Send a large SASE w/3 stamps

RNF**VECTOR-FINDER**

Handheld, VHF direction finding antenna. Uses any FM XCVR, Antennas fold Audible & LED display
VF-142Q, 130-300 MHz
\$239.95
VF-142QM, 130-500 MHz
\$289.95

**ATTENUATOR**

Switchable, T-Pad Attenuator, 100 dB max - 10dB min BNC connectors AT-100, \$89.95

S/H Extra, CA add tax

7969 ENGINEER ROAD, #102, SAN DIEGO, CA 92111
858.565.1319 • **FAX 858.571.5909****Kanga US-QRP Products**

- DK9SQ Portable Mast and Antennas.
- Kanga Products: FOXX3, ONER, Sudden, RF Actuated Changeover, StocktonDual Power Meter.
- Hands Electronics: RTX109, GQ40/30/20, GQ-PLUS, RTX Monoband SSB/CW Transceivers.
- RDS50 6-Meter SSB/CW Transceiver.
- NCM-1 Noise Figure Meter.
- KK7B-R1, R2Pro, T2, MiniR2, LM2, UVFO.
- W7ZOI-MicroMountaineer, Spectrum Analyzer, Power Meters.

Kanga US

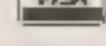
3521 Spring Lake Dr. • Findlay, OH 45840
(419) 423-4604 • kanga@bright.net
www.bright.net/~kanga/kanga/

HANG YOUR NEXT WIRE ANTENNA THE EZ HANG WAY

Everything you need; the original EZ Hang, the EZ Winder, a spare set of bands and seven extra weights: \$99.95 + \$8.05 (US) S&H

EZ HANG

Code C, 8645 Tower Drive, Laurel, MD 20723
Phone: 540-286-0176
www.ezhang.com

**World's Best Selling**

- Amateur Radio License
- Computer Aided Instruction Software

\$39.95 \$4 Shipping

- Learn right at your PCI 3.5 disks and CD cover all written and Morse code exams Tech through Extra. Review all 1434 questions, take sample exams, learn Morse code, build speed and more!
- free Bonus...Part 97 Rule Book and 258 page question pool book!
- CALL TOLL FREE **The W5YI Group**
1-800-669-9594 POB 565101
VISA/MC/DISC/AmEx Dallas, TX 75356

ware-defined radios, it's possible for new radio communications systems to evolve rapidly.

If you have not attended a Hamvention recently or have never been to one, you really do owe it to yourself as an amateur radio operator to attend. The sheer diversity of equipment and expertise and the opportunity to come face to face with other amateurs is rare. For example, it was quite a thrill for me to meet with Roy Neal, K6DUE, and Bill Pasternak, WA6ITF, when they stopped at the CQ booth. I've admired and enjoyed Roy and Bill's work on behalf of amateur radio for many years, and it was a real honor to be able to shake their hands and tell them so.

Costs to attend the Hamvention are surprisingly affordable if you plan ahead. Many hams split the cost of a hotel room, and air travel to Dayton can be reasonably priced if full advantage is taken of fare specials and advance reservations. I recommend arriving Thursday to be able to attend the event all day Friday.

Digital Wireless Field Day

I've often described how I "fell in with a bad crowd" of digitally-minded hams when I moved from Ohio to the Seattle area in 1987. Of course, I mean this in a humorous way, and it's been a very rewarding association.

In our first summer in Seattle, my wife and I were invited to join a tradition of attending the ARRL Northwestern Division Convention held in Seaside, Oregon in early June. For us city (well, suburban mostly) dwellers, a trip to Seaside is a good excuse to leave town for a long weekend and relax in a resort town near the Pacific Ocean on a stretch of coastline that is particularly scenic. In marked contrast to most amateur radio gatherings, visiting Seaside is a distinctly family-friendly experience, so it's popular all around. There are plenty of amateur radio activities for ham, and plenty of things to do for those who aren't really into amateur radio.

Part of the tradition is that lots of us bring "toys" to share—radios, computers, software, etc. Over the last five or so years the event has evolved into something of a ritual that I thought would be fun and instructive to describe.

Seaside is fairly small. Many of the hotels are in the downtown area, spread out over not much more than a square mile or so, and many are multi-story. "Wetnet Mafia" members all have their favorite hotels. Some (mostly single) opt for splendid beach views (pricey), and

some opt for more economical lodgings (no beach views). Like most hams, we bring radios. Like most digitally-inclined hams, we also bring laptops. I'm sure you can guess what's coming. . . .

Some of the most fun we have is getting most of the group connected to each other in multiple ways via radio. Voice communications is a given (simplex is easy), but of course we have to "gadget" somewhat and set up one or more multi-band radios to cross-link multiple simplex frequencies. Digitally, things are considerably more complex. In years past we've used Ethernet hubs to link multiple laptops and PCs into a network. One of us usually obtains local dial-up internet service for the weekend, and the phone is dialed in to the ISP for the weekend. The internet connection is shared out on the Ethernet via a Linux box (which provides automatic "private" IP addresses via Dynamic Host Configuration Protocol—DHCP).

In 1999 we brought a portable 222 MHz 9600 baud repeater and several radios crystallized for the repeater. Via the repeater and other links such as APRS, we link up other systems in other hotels. A typical Saturday evening on a Seaside weekend finds at least half a dozen of us in whatever hotel room is the "hub." There are Linux compiles and installations going on, and nonstop music pouring out of another PC that has gigabytes of MP3 music files. A number of CD-ROMs are being burned. Several laptops are in use fetching mail over the internet. The digital repeater echoes APRS packets from the national APRS network. You can probably get the picture.

In 2001 we tried using 802.11b wireless LAN devices. Results were mixed. The good news is that with 802.11b equipment it was relatively easy to network a number of computers together both vertically (multiple floors) and horizontally (different rooms on the same floor) in the hotel at which many of us were staying. The bad news is that we tried using an Apple AirPort as the hub (it would dial up the ISP and share the internet connection.) and simply could not get it to work despite many attempts.

The Bigger Picture

It was only after several years of being a part of this ritual that I was able to have a "bigger picture" view of what this gathering is—a different kind of Field Day. Unlike the ARRL Field Day, where the assumption is that no infrastructure of any kind has survived the (fill in the blank) disaster, this gathering assumes

that some infrastructure would survive, especially on the edge of the disaster (and why this scenario is aptly described as the "Edge of the Disaster") scenario. With the ability to connect to the internet *somewhat*, internet communications can be established via radio *into* the disaster from the "bridging" equipment at the edge.

Several of my co-conspirators had their appetites whetted about the possibilities of 802.11b equipment, and coincidentally, on the trip from Seattle to Seaside I had visited an Internet Service Provider that is entirely wireless. They use 802.11b equipment to provide connections to businesses at speeds equivalent to DSL via wireless. The equipment they use is compact and relatively inexpensive.

Thus, one of my background projects for the coming year is to put together a portable 802.11b system suitable for the purposes described above. I already have some of the pieces. One is a portable fiberglass mast that telescopes from 3 ft. to over 30 ft. With a goodly amount of duct tape and a balcony (my wife already reserved a prime third-floor corner room at our favorite Seaside hotel) and a lightweight 2.4 GHz omnidirectional antenna, it should be possible to provide internet access for blocks, enabling laptops with nothing more than 802.11b cards to have access to the internet. Another piece I have is the "power system," which is the Statpower Xpower system I described in the May issue. Yet another part is a "Dial on Demand" router, which is my (now discontinued) Ramp Networks WebRamp M3, with an external modem.

Wearing one of my other hats (writing about Broadband Wireless Internet Access), I talked briefly to an ISP in the Seaside area, and it was interested in the possibility of using wireless. In 2002 we well may try to link up between the "portable" system at the hotel and the ISP's Point of Presence (POP). At the ISP we'll probably use a directional antenna, and at the hotel we'll most likely use an omnidirectional antenna.

Of course, we'll be doing other digital activities as well. Several of our group have come close to bringing complete HF systems with them, and with some minor encouragement they'll probably bring systems complete enough to do PSK-31 and other digital modes (now that laptop PCs are coming equipped with powerful-enough sound subsystems). Likely we'll have the 9600 baud 222 MHz repeater back, and with the internet connection we'll probably have an operational (temporary) APRS Igate

online to provide ample connectivity to all the APRS systems in the area.

Publishing Notes

As I announced in this column, I was gratified to be asked to join the TAPR Board of Directors. Among many other changes that TAPR is undergoing, the longtime editor of the *Packet Status Register (PSR)*, Bob Hansen, N2GDE, announced his retirement, and I was asked to take over the editorship of the *PSR*. I was very honored to be asked to edit the *PSR*, a publication I have admired for nearly 20 years. Among the challenges the *PSR* will face is a move to electronic publication.

With regard to the "Digital Wireless" column in *CQ*, after careful consideration and some missed deadlines because of other projects with which I am involved, Rich, W2VU, and I decided that having this column appear bi-

monthly, at least for the near future, is best for all concerned, so you can look for me here again on the pages of *CQ* in the October issue.

As always, comments and questions on these and other topics are welcomed.

73, Steve, N8GNJ

Web Pages of The Month

(Blush) . . . Steve Stroh, N8GNJ's Advanced Amateur Radio: <www.strohpub.com/hamradio.htm>

I've been compiling a list of web pages on "Advanced" Amateur Radio. Primarily that means digital, but not exclusively so. It's growing and evolving, and in future columns I'll simply mention some of the more interesting additions to the page. In addition, I hope to begin posting digital photographs I take at events such as the Dayton Hamvention. Being mostly a "words" guy, doing a reasonable job of posting photographs will be yet another new challenge!

What's Under Your FT-817?

Z-11 QRP Autotuner

Microprocessor Controlled
LED Status Lights
1.8 to 30 MHz
.1 to 60 Watts
Auto Sleep Mode
+12 VDC Input
Rugged Metal Case

LDG Electronics, Inc.
1445 Parran Rd.
PO Box 48
St. Leonard, MD 20685



\$179 Assembled
\$145 Kit and Enclosure



Zero Power Draw
Once Tuned!

Latching relays hold the tune settings so power can be removed! Perfect for remote or backpack operation. Weighs only 15 oz.

Toll Free Sales: 877-890-3003
Support: 410-586-2177
Fax: 410-586-8475
E-Mail: ldg@ldgelectronics.com

See your favorite dealer or visit www.ldgelectronics.com

ADVANCED SPECIALTIES INC.

New Jersey's Communications Store



VX-5R
50/144/430 MHz Triple Band
WideReceive, 5w Output

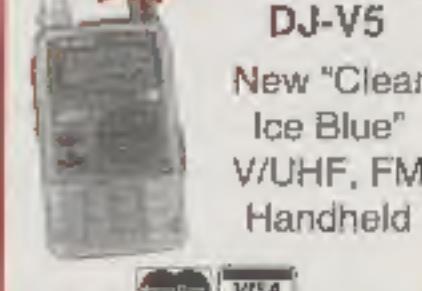
YAESU ALINCO

AMATEUR RADIO'S VALUE LEADER™

Authorized Dealer

ALINCO * LARSEN * COMET * MALDOL * ADI * MFJ * UNIDEN RAM-
SEY KITS * MAHA * ANLI * RANGER * YAESU * PRYME

AMATEUR RADIO - SCANNERS - BOOKS - ANTENNAS -
FILTERS - GMRS - ACCESSORIES & MORE



DJ-V5
New "Clear
Ice Blue"
V/UHF, FM
Handheld

Closed Sunday & Monday NO CATALOGS
Orders/Quotes 1-800-9-2M-9HAM
(201)-VHF-1270

114 Essex Street Lodi, NJ 07644

web site: www.advancedspecialties.net



100 mem. Dual Band Mobile



FT-817 Portable
HF/VHF/UHF